

- B5
- a. taking a sample of a melanoma from a subject;
  - b. isolating tumor infiltrating lymphocytes from said sample;
  - c. reacting said tumor infiltrating lymphocytes with a peptide comprising at least part of the amino acid sequence of SEQ ID NO:9, wherein an original amino acid at position 2 of SEQ ID NO:9 is substituted with a valine, or an original amino acid at position 8 of SEQ ID NO:9 is substituted with an alanine, and wherein said peptide is capable of inducing an increased binding affinity towards lymphocytes than a peptide not comprising either of said substitutions, to form an antigen-lymphocyte complex;
  - d. obtaining tumor infiltrating lymphocytes reacted with said peptide comprising at least part of the amino acid sequence of SEQ ID NO:9 from said reaction mixture of step c.; and
  - e. recovering lymphocytes from said antigen-lymphocyte complex thus isolating melanoma antigen reactive tumor infiltrating lymphocytes.
- 

14. (Twice amended) A conjugate of the peptide of claim 2 and a detectable marker, wherein said detectable marker is a radionuclide.

B6  
15. (Twice amended) A conjugate of the peptide of claim 4 and a detectable marker, wherein said detectable marker is a radionuclide.

---

21. (Amended) A vaccine comprising the peptide of claim 4 or a nucleotide sequence encoding said peptide, wherein said peptide is capable of inducing an increased binding affinity towards lymphocytes than a peptide comprising the amino acid sequence of SEQ ID NO:9, and wherein said lymphocytes are directed against metastatic melanomas.

B7  
one  
c4  
22. (Amended) A vaccine comprising the peptide of claim 2 or a nucleotide sequence encoding said peptide, wherein said peptide is capable of inducing an increased binding affinity towards lymphocytes than a peptide comprising the amino acid sequence of SEQ ID NO:9, and wherein said lymphocytes are directed against metastatic melanomas.

---